On page 12:

cancel lines 1-7, and substitute the following paragraph, therefor;

--The above-described method is illustrative of the principles of the present invention. Numerous modifications and adaptions thereof will be readily apparent to those skilled in this art without departing from the spirit and scope of the present invention.--.

IN THE CLAIMS:

On substitute page 13:

line 1, replace "Patent claims" with --WHAT IS CLAIMED IS:--;

Please amend claims 1- 16 as follows:

1. (Amended) A method [Method] for the transmission of data in an ATM transmission system, comprising the steps of: [wherein]

supplying digital data of a specific plurality of data channels [(K_0-K_3) supplied] parallel to an [the] input side of a sender;

converting said digital data [are converted] into data units [(HB0, HB1)] that respectively comprise an identical plurality of bits from each of said data channels; [channel (K_0-K_3), and wherein the]

serially transmitting individual said data units [(HB0, HB1) are serially transmitted] in a [the] form of cells that are respectively composed of a specific plurality of said [these] data units, [(HB0, HB1), characterized in that] each cell having [comprises] a specific, characteristic bit sequence;

receiving, by a receiver said [the] serially transmitted data units [(HB0, HB1) are received];

monitoring, by said receiver, said [the] received data units [(HB0, HB1) are monitored] for an [the] occurrence of said [the] characteristic bit sequence and, after identifying said [identification of the] characteristic bit sequence, identifying a [the] first data unit [(HB0)] of a [the] cell corresponding to said [the] characteristic bit sequence [is determined];

successively dividing, beginning with said [the] first data unit [(HB0)] of

said [the] cell corresponding to said [the] characteristic bit sequence; [the] individual bits of each said data unit [(HB0, HB1)] of said [the] corresponding cell [are successively divided] onto a plurality of parallel data channels [(K_0-K_3)] of an [the] output side of said receiver corresponding in number to said [the] plurality of data channels [(K_0-K_3)] of said [the] input side of said sender and said [the] bits of each said data unit [(HB0, HB1)] are output parallel via [the] corresponding said data channels [(K_0-K_3)] of said [the] output side.

2. (Amended) A method [Method] according to claim 1, wherein said [characterized in that the] characteristic bit sequence transmitted within each cell comprises 8 bits.

3. (Amended) A method [Method] according to claim 2, further comprising the step of setting, in alternation from cell to cell, the most-significant bit of said characteristic bit sequence [characterized in that, in step b)] before said step of transmitting said [the transmission of the] characteristic bit sequence [, the more-significant bit of the characteristic bit sequene [sic] is set in alternation from cell to cell].

4. (Amended) A method [Method] according to claim 3, wherein all bits other than said most-significant bit of said [characterized in that the remaining bits of the] characteristic bit sequence are the same for each cell.

5. (Amended) A method [Method] according to claim 1, wherein said [one of the preceding claims, characterized in that the] plurality of parallel data channels [(K_0-K_3)] of said [the] input side is four, said [whereby the] digital data being [are] synchronously supplied to said [the] four data channels [(K_0-K_3)] of said [the] input side in parallel form [in step a)] in said step of supplying digital data.

6. (Amended) A method [Method] according to claim 5, wherein [characterized in that, in step a), the data of the data channels (K_0-K_3) of the input side are converted such into the data units (HB0, HB1) to be serially transmitted that] each said data unit that is transmitted in said step of serially transmitting individual said data units [(HB0, HB1)] comprises one synchronously read-in bit from each said data channel [(K_0-K_3), whereby the] said synchronously read-in bit of a specific data channel [(K_0-K_3) is] being arranged at a [the] same location in every said data unit [(HB0, HB1)].

7. (Amended) A method [Method] according to claim 5 [or 6], wherein said step of serially transmitting individual said data units comprises transmitting said [characterized in that the] characteristic bit sequence [is transmitted] in [the form of] two successive data units [(HB0, HB1)] with respectively four bits in each said successive data unit [step b)].

8. (Amended) A method [Method] according to claim 1, wherein said step of serially transmitting individual said data units transmits said [one of the preceding claims, characterized in that, in step b), the] characteristic bit sequence [is transmitted] before a first data unit of a [the] corresponding cell that comprises [the] bits of said [the] data channels [(K_0-K_3)] of said [the] input side.

9. (Amended) A method [Method] according to claim 1, wherein said step of serially transmitting said [one of the preceding claims, characterized in that the] individual data units [(HB0, HB1) are transmitted] comprises transmitting said individual data units via an optical transmission medium [in step b)].

10. (Amended) A method [Method] according to claim 1, wherein:

said step of converting said digital data into data units is performed by clocking said [one of the preceding claims, characterized in that, in step a), the] digital data of said [the] individual, parallel data channels [(K_0-K_3)] of said [the]

input side [are converted clocked into the data units (HB0, HB1)] to be serially transmitted; and

said step of successively dividing [in that, in step e), the] individual bits of every serially transmitted data unit is performed by clocking said individual bits [(HB0, HB1) are divided clocked] onto said [the] individual, parallel data channels [(K_0-K_3)] of said [the] output side and are output.

11. (Amended) A method [Method] according to claim 1, wherein [one of the preceding claims, characterized in that] each said cell, including said [the] characteristic bit sequence, comprises 64 bytes that are transmitted in 128 data units [(HB0, HB1)] with respectively four bits in said step of transmitting individual said data units [step b)].

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12. (Amended) A method [Method] according to claim 1, wherein [one of the preceding claims, characterized in that] each said cell encompasses a first group of data units that comprise control information and a second group of data units that comprise payload information, said [whereby the] first group comprising said [comprises the] characteristic bit sequence for said [the] corresponding cell.

13. (Amended) A method [Method] according to claim 11, wherein said [and 12, characterized in that the] first group comprises 16 bytes and said [the] second group comprises 48 bytes.

14. (Amended) An ATM transmission system, comprising:

a sender [transmission means (S)] that converts digital data of a specific plurality of data channels [(K_0-K_3)] supplied to it at an [the] input side into data units [(HB0, HB1)] such that each data unit [(HB0)] comprises an identical plurality of bits from each said data channel [(K_0-K_3)], and serially transmits [the] individual said data units [(HB0, HB1)] via a transmission medium [(D)] in a [the] form of cells, [whereby] each said cell comprising [is composed of] a specific

plurality of data units [(HB0, HB1), characterized in that], each said cell respectively comprising comprises a specific, characteristic bit sequence;

[in that] a receiver [reception means (E) is provided] that receives said [the] serially transmitted data units [(HB0, HB1)] from said sender [the transmission means (S)] and monitors said data units [them] for an [the] occurrence of said [the] characteristic bit sequence, said receiver [whereby the reception means (E)], after detecting said [the] characteristic bit sequence in said [the] serially transmitted data units [(HB0, HB1)], determines a [the] first data unit of the cell corresponding to said [the] characteristic bit sequence and, beginning with said [this] first data unit, successively divides [the] individual said bits of each said data unit [(HB0, HB1)] of a [the] corresponding cell onto a plurality of parallel data channels [(K_0-K_3)] of an [the] output side corresponding in number to said [the] plurality of data channels [(K_0-K_3)] of said [the] input side and outputs said individual said bits of each said data unit [them] in parallel.

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15. (Amended) An ATM transmission system according to claim 14, wherein said sender sends said [characterized in that the transmission means (S) and the reception means (E) are fashioned such that the] digital data of said [the] parallel data channels [(K_0-K_3)] supplied to said sender [the transmission means (S) are transmitted from the transmission means (S)], to said receiver [the reception means (E)] according to the method [according to] of claim 1 [one of the claims 2-13] and are output at said receiver [reception means (E)] via said [the] parallel data channels [(K_0-K_3)] of said [the] output side.

16. (Amended) An ATM transmission system according to claim 14, wherein said [or 15, characterized in that the] parallel data channels [(K_0-K_3)] supplied to said sender [the transmission means (S) and/or the parallel data channels (K_0-K_3) of the output side connected to the reception means (E) comprise] utilize a data transmission rate of approximately 830 Mbit/s; and

said transmission medium being an optical medium capable of